

REMARKS

In a non-final office action dated August 14, 2006, the Examiner rejected the Applicant's claims 1-6 and allowed claims 7-13. The Applicant appreciates the allowance of claims 7-13. The following is a brief discussion of the rejections made by the Examiner as well as the Applicant's response. The Applicant respectfully requests reconsideration of claims 1-6 of the application in view of the following discussion.

Objections to the Drawings

The Examiner objected to the drawings because the reference numerals and figure numbers were not uniformly drawn. Replacement drawing sheets correcting the non-uniformity of the reference numerals and figure numbers are included. The Applicant respectfully requests acceptance of these corrected drawings.

Rejections based on 35 U.S.C. § 102

The Examiner rejected claims 1, 4, and 6 under 35 U.S.C. § 102(e) as being anticipated by Brudgick (US 2004/0239040).

Rejections based on 35 U.S.C. § 103

The Examiner rejected claims 2, 3, and 5 under 35 U.S.C. § 103(a) as being unpatentable over Brudgick (US 2004/0239040).

Comments

In response to the office action, the Applicant would like to take this opportunity to further clarify the present invention.

A. Rejections based on 35 U.S.C. § 102(e)

With respect to claims 1 and 4, the Examiner stated that recitation of intended use does not define over Burdick. There are appreciable differences between Burdick and the Applicant's seal beyond the intended use. The Burdick sealing arrangement will be discussed first.

The honeycomb seal disclosed by Burdick is an "interstage seal in a steam turbine which minimizes or precludes steam leakage flow between high and low pressure regions on opposite sides of the nozzle stage in the region between the nozzle inner ring and the rotor" (see para. [0003]). To minimize or preclude steam leakage, one or more labyrinth teeth cut a groove into the honeycomb, and reside in this groove, effectively blocking the steam leakage path (see FIGS. 4-6). "By cutting or rubbing in the honeycomb structure by the labyrinth tooth, substantially improved reduction in steam leakage flows are therefore provided" (para. [0004]). As one skilled in the art understands, this cutting or rubbing of the honeycomb structure by the labyrinth tooth occurs once the honeycomb seal is installed in the turbine and the rotor turns, thereby causing the tooth to cut a groove in the honeycomb seal.

The Applicant's honeycomb seal has a plurality of channels 40 that extend along inner surface 37. "The channel geometry arrangement ensures that a controlled amount of cooling air is allowed to pass through sealing device 30 in order to cool the turbine vane platforms at the turbine inlet" (pg. 5, lines 31-33). Furthermore, as can be understood from Applicant's FIGS. 7 and 8 and the specification, there is no means positioned adjacent sealing device 30 and/or operating against the sealing device that would create channels 40. The channels 40 are machined into the sealing device prior to assembly in the turbine such that the desired amount of cooling air is permitted to cool the vane platform.

The Applicant's invention, while providing a seal, does allow a controlled and known amount of cooling air to pass through the sealing device for cooling the turbine vane platform. This limitation, previously presented in claim 4, has been incorporated into claim 1 to further clarify claim 1, such that it is now in a more favorable condition for allowance. The seal disclosed by Burdick practices opposite of the Applicant in that Burdick seeks to eliminate or minimize steam leakage. Therefore, for at least the reasons cited above, it is the Applicant's belief that claims 1 and 4, as currently amended, are not properly anticipated by Burdick.

With respect to claim 6, it is the Applicant's belief that this claim is not anticipated by Burdick either since claim 6 further limits claim 1, which has been distinguished over the prior art.

B. Rejections based on 35 U.S.C. § 103(a)

1. Applicable Authority

The requirements of a *prima facie* case of obviousness are summarized in MPEP § 2143 through § 2143.03. In order "[t]o establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success [in combining the references]. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991)". See MPEP § 2143. Further, in establishing a *prima facie* case of obviousness, the initial burden is placed on the Examiner. "To support the conclusion that the claimed

invention is directed to obvious subject matter, either the references must expressly or impliedly suggest the claimed invention or the examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references. *Ex parte Clapp*, 227 USPQ 972, 972, (Bd. Pat App. & Inter. 1985).” *Id.* See also MPEP § 706.02(j) and § 2142.

2. Rejections based on Burdick

With respect to the rejection of claims 2, 3, and 5 under 35 U.S.C. § 103(a) to Burdick as the Applicant’s invention being obvious, the Applicant respectfully disagrees. Claims 2 and 3 further limit the channel configuration and claim 5 further limits the wall thickness of the honeycomb.

As discussed above, one of the three basic requirements to establish a *prima face* case of obviousness is for the prior art to teach or suggest all the claim limitations. Since only Burdick was cited as prior art, it alone must teach all of the limitations of claims 2, 3, and 5, and since these claims are dependent, Burdick, must also teach all of the limitations of any intervening claim, which in this case is claim 1. The Applicant believes that this burden of proof is not met by Burdick. Through the discussion presented above the Applicant’s sealing device has been distinguished from the prior art in that the Applicant’s sealing device provides channels 40 through which a controlled amount of cooling fluid, such as air, can pass. Burdick does not teach active cooling in a seal through channels, but instead seeks to eliminate or minimize any steam leakage through its seal and labyrinth tooth arrangement. Therefore, as claim 1 is now believed to be allowable in view of the prior art, so would further narrowing claims 2, 3, and 5.

It is the Applicant’s belief that the standing rejections have been overcome by the discussion presented above and amendments made to the claims. Again, the Applicant thanks

the Examiner for allowance of claims 7-13 and respectfully requests reconsideration of the application, as amended, and allowance of rejected claims 1-6.

Although no fees are believed due in conjunction with this response, the Commissioner is hereby authorized to charge any additional fees that are required, or credit any overpayment, to Deposit Account No. 19-2112.

If any issues remain that would prevent issuance of this application, the Examiner is urged to contact the undersigned by telephone prior to issuing a subsequent action.

Respectfully submitted,



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